AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method for calibrating a laser three-dimensional digitizing sensor, comprising:

defining a three-dimensional coordinator X-Y-Z;

providing a calibrating surface;

projecting a laser light plane onto the calibrating surface to form a bright line thereon, wherein the laser light plane and the bright line are parallel to X-Z plane;

translating the calibrating surface along the Z axis to establish a first mapping table of a two-dimensional digital image to the Z coordinate~~.~~; and

rotating the calibrating surface by a predetermined first angle along the Y axis then translating along the Z axis to establish a second mapping table of the two-dimensional digital image to the Z coordinate according to the first mapping table.

2. (Original) The method for calibrating a laser three-dimensional digitizing sensor as claimed in claim 1 further comprising the following step:

rotating the calibrating surface by a predetermined second angle along the X axis then translating along the Z axis to establish a third mapping table of the two-dimensional digital image to the Y coordinate according to the first mapping table.

3. (Currently Amended) An method for calibrating a laser three-dimensional digitizing sensor, comprising:

providing a base plane, a laser sensor generating a laser light plane, a flat block having a calibrating surface, a rotating axis perpendicular to the base plane, a translating axis perpendicular to the rotating axis;

projecting the laser light plane onto the calibrating surface forming a bright line;

adjusting the laser light plane parallel to the base plane;

adjusting the flat block such that the calibrating surface is perpendicular to the translating axis;

translating the flat block to a plurality of predetermined first calibrating positions along the translating axis then recording corresponding bright line images made by the laser sensor at each first calibrating position;

rotating the flat block a predetermined angle along the rotating axis, translating the flat block to a plurality of predetermined second calibrating positions along the translating axis, then recording corresponding bright line images made by the laser sensor at each second calibrating position.

4. (Currently Amended) An apparatus for calibrating a laser three-dimensional digitizing sensor, comprising:

a base plane;

a laser sensor fixed to the base plane to generate a light plane parallel to the base plane; and

a calibrating mechanism fixed to the base plane having a flat block with a calibrating surface thereon, wherein the light plane is projected onto the calibrating surface forming a bright line, and ~~such that~~ the laser sensor senses and generates a digital image of the bright line.

5. (Original) The apparatus for calibrating a laser three-dimensional digitizing sensor as claimed in claim 4, wherein the calibrating mechanism further has a rotating portion including a rotating axis perpendicular to the base plane, wherein the flat block rotates along the rotating axis by the rotating portion.

6. (Original) The apparatus for calibrating a laser three-dimensional digitizing sensor as claimed in claim 5, wherein the calibrating mechanism further has a translating portion including a translating axis perpendicular to the rotating axis, wherein the flat block translates along the translating axis by the translating portion.

7. (Original) The apparatus for calibrating a laser three-dimensional digitizing sensor as claimed in claim 4, wherein the rotating portion is a rotatable platform driven by a motor connected to a reduction mechanism.

8. (Original) The apparatus for calibrating a laser three-dimensional digitizing sensor as claimed in claim 4, wherein the translating portion is a linear guide way.